What is claimed is:

1. A method of monitoring an entity within a process plant comprising:

collecting data pertaining to the operation of the entity while the entity is in operation;

transmitting the collected data to an index computation device;

creating a use index from the collected data, wherein the use index represents status information regarding the entity; and

storing the use index in a database.

2. The method of claim 1, wherein the collected data includes maintenance and process data.

3. The method of claim 1, wherein the collected data includes diagnostic data pertaining to the entity.

4. The method of claim 1, wherein the collected data includes on-line monitoring data pertaining to the entity.

5. The method of claim 1, wherein the process plant includes a process control system having a control strategy, the method further comprising the steps of:

providing the use index to the process control system; and

changing the control strategy based on the use index.

6. The method of claim 1, further comprising the steps of:

providing the use index to a process control application; and

changing a process control parameter based on the use index.

7. The method of claim 1, wherein the process plant includes a maintenance system having a maintenance function, the method further comprising the steps of:

providing the use index to the maintenance system; and

changing the maintenance function based on the use index.

8. The method of claim 1, further comprising the step of executing a decision within the process plant based on the use index.

9. The method of claim 8, wherein the step of executing a decision comprises analyzing the entity.

10. The method of claim 8, wherein the step of executing a decision comprises analyzing an aspect of the process plant other than the entity.

11. The method of claim 8, wherein the step of executing a decision comprises initiating an automated process.

12. The method of claim 8, wherein the step of executing a decision comprises initiating corrective measures.

13. The method of claim 8, wherein the step of executing a decision comprises optimizing control of the entity.

14. The method of claim 8, wherein the step of executing a decision comprises adjusting a parameter of the entity.

15. The method of claim 1, further comprising the step of creating a representation of the entity on a display.

16. The method of claim 15, further comprising the step of displaying the representation of the entity with the use index on the display.

17. The method of claim 1, further comprising the step of displaying a description corresponding to the use index, wherein the description is indicative of the status information regarding the entity.

18. The method of claim 17, further comprising the step of analyzing the use index to provide the description.

19. The method of claim 1, wherein the use index is a performance index indicating the relative performance of the entity.

20. The method of claim 1, wherein the use index is a variability index indicating an amount of deviation of a parameter of the entity.

21. The method of claim 1, wherein the use index is a utilization index indicating a degree of exploitation of the entity.

22. The method of claim 1, wherein the use index is a health index indicating the health of the entity.

23. The method of claim 1, wherein the use index is a performance index and the step of creating the performance index comprises:

modeling the entity based on the collected data to provide one or more estimated parameters of the entity;

comparing the one or more measured parameters to a threshold; and

producing a performance index value based on the step of comparing.

24. The method of claim 23, further comprising the step of performing a regression analysis using the one or more measured parameters to determine an unknown parameter associated with the entity.

25. The method of claim 23, further comprising the step of modeling the entity based on predetermined data to produce the threshold, wherein the threshold comprises a baseline performance of the entity.

26. The method of claim 23, wherein the performance index is an efficiency measurement of the entity.

27. The method of claim 1, wherein creating a use index comprises predicting the use index from the collected data, wherein the use index represents predicted status information regarding the entity.

28. The method of claim 1, wherein the use index is a variability index and the step of creating the variability index comprises:

analyzing the collected data to determine a statistical value associated with a parameter of the entity; and

comparing the statistical value to a predetermined threshold.

29. The method of claim 28, wherein the predetermined threshold is one of an expected amount of variation in the parameter of the entity and a desired amount of variation in the parameter.

30. The method of claim 1, wherein the use index is a utilization index and the step of creating the utilization index comprises:

establishing a predetermined amount of use for the entity;

analyzing the collected data to provide an actual amount of use;

comparing the actual amount of use to the predetermined amount of use; and

producing a utilization index value based on the step of comparing.

31. The method of claim 30, wherein the predetermined amount of use is one of a utilization capacity of the entity and a desired utilization of the entity.

32. The method of claim 30, wherein the step of creating the use index comprises determining a ratio of the measured use to the predetermined amount of use.

33. The method of claim 30, wherein the step of creating the use index comprises determining the difference between the measured use and the predetermined amount of use.

34. The method of claim 30, wherein the step of creating the use index comprises determining a percentage of the predetermined amount of use.

35. The method of claim 1, wherein the use index is a health index and the step of creating a health index comprises:

establishing a predetermined life cycle for the entity;

determining the entity's current status within the predetermined life cycle based on the collected data; and

producing a health index value indicative of the entity's current status based on the step of determining.

36. The method of claim 35, wherein the predetermined life cycle is based on at least one of a historical usage of the entity, an expected usage of the entity, an expected environmental impact on the entity, and a predetermined passage of time.

37. The method of claim 35, wherein the collected data is at least one of actual usage of the entity, actual environmental impacts on the entity, a current detected state of the entity and a quality of operation of the entity.

38. The method of claim 35, wherein the step of storing the use index comprises storing the health index value as one of a linear relationship between the current status of the life cycle and the predetermined life cycle, an exponential relationship between the current status of the life cycle and the predetermined life cycle, and a polynomial relationship between the current status of the life cycle and the predetermined life cycle.

39. The method of claim 1, wherein the entity includes a plurality of lower level entities each having an associated lower level use index, and wherein the step of creating a use index comprises:

assigning a weighting value to each of the lower level entities;

combining the lower level use indices and weighting values assigned to each of the lower level entities; and

producing at least one of a weighted average and a weighted combination of the lower level entities from the step of combining.

40. The method of claim 39, wherein the step of assigning a weighting value comprises modifying an existing weighting value.

41. The method of claim 39, further comprising the step of displaying one or more representations of the weighting values with the corresponding lower level entities to a user on a display.

42. The method of claim 1, wherein the entity includes a plurality of lower level entities, the method further comprising the steps of:

creating a lower level model for at least one of the lower level entities; and

simulating the operation of the at least one lower level entity based on the lower level model to provide data pertaining to the operation of the at least one lower level entity.

43. The method of claim 42, further comprising the step of creating a lower level use index for each of the plurality of lower level entities based on the data pertaining to the operation of the at least one lower level entity, and wherein the step of creating a use index for the entity comprises combining the lower level use indices.

44. The method of claim 42, wherein the at least one lower level entity includes at least two lower level entities each having an associated lower level model, the method further comprising the steps of:

interconnecting the lower level models of the at least two lower level entities to create a model of the entity; and

simulating the operation of the entity based on the model of the entity to provide the data pertaining to the operation of the entity.

45. The method of claim 1, wherein the step of creating a use index comprises creating the use index within a device, wherein the device is one of a field device and field equipment.

46. The method of claim 45, further comprising the step of automatically reporting the use index to a centralized database.

47. The method of claim 45, wherein creating a use index comprises creating a use index a first time and creating a use index a second time, the method further comprising the steps of:

recognizing a change in the use index between the first and second time; and

automatically reporting the change to a centralized database.

48. The method of claim 45, wherein the process plant comprises a system hierarchy having a plurality of levels and a plurality of devices, the method further comprising the steps of:

periodically acquiring the use index from each device;

creating an aggregated use index at each level of the system hierarchy from the use indices; and

displaying the aggregated use index for each level.

49. The method of claim 45, wherein the device is one of a two-wire device, a three-wire device, a four-wire device, a wireless device, a device having a processor, a variable speed driver, a controller, a multiplexer, rotating equipment, an actuator, power generation equipment, power distribution equipment, a transmitter, a sensor, a control system, a transceiver, a valve, a positioner, a switch, electrical equipment, a server, a hand held device, a pump, an I/O system, a smart field device, a non-smart field device, a HART protocol device, a Fieldbus protocol device, a PROFIBUS® protocol device, a WORLDFIP® protocol device, a Device-Net® protocol device, a AS-Interface protocol device, a CAN protocol device, a TCP/IP protocol device, an Ethernet device, an internet-based device, and a network communication device.

50. A method of monitoring a plurality of entities within a process plant, comprising the steps of:

collecting data pertaining to the operation of each of the plurality of entities while each entity is in operation;

transmitting the collected data to an index computation device;

creating a use index for each of the plurality of entities based upon the collected data wherein the use index represents status information regarding the entity; and

storing the use indices for each of the plurality of entities in one or more databases.

51. The method of claim 50, wherein the plurality of entities together comprise a higher level entity, the method further comprising the step of combining the use indices of the plurality of entities to provide a higher level use index for the higher level entity.

52. The method of claim 51, wherein the step of combining the use indices comprises utilizing a weighted sum of the use indices of the plurality of entities.

53. The method of claim 50, wherein at least one of the plurality of entities includes a plurality of lower level entities, the step of collecting data includes collecting data pertaining to the operation of each of the plurality of lower level entities while each of the lower level entities is in operation, and the step of creating a use index for each of the plurality of entities includes:

creating a lower level use index for each of the plurality of lower level entities based upon the collected data; and

combining the lower level use indices to provide the use index for the at least one of the plurality of entities.

54. The method of claim 53, wherein the step of combining the use indices comprises utilizing a weighted average of the lower level use indices.

55. The method of claim 53, wherein the lower level use index is a performance index indicating the relative performance of the lower level entity.

56. The method of claim 53, wherein the lower level use index is a variability index indicating an amount of deviation of a parameter of the lower level entity.

57. The method of claim 53, wherein the lower level use index is a utilization index indicating a degree of exploitation of the lower level entity.

58. The method of claim 53, wherein the lower level use index is a health index indicating the health of the lower level entity.

59. The method of claim 50, wherein the step of creating a use index comprises creating the use index within a device, wherein the device is one of a field device and field equipment.

60. The method of claim 59, further comprising the step of detecting a first condition within the field device, wherein the first condition pertains to the field device, and wherein creating the use index comprises creating a health index based on the first condition.

61. The method of claim 60, further comprising the steps of:

detecting a second condition different from the first condition within the field device, wherein the second condition pertains to the field device; and

creating a new health index based on the second condition.

62. A system for displaying use indices for a process plant having a plurality of entities, the system comprising:

a processor;

a display;

a database adapted to store use indices for each of the plurality of entities;

a first routine adapted to be executed by the processor which stores a representation of each of the plurality of entities in the database; and

a second routine adapted to be executed by the processor which displays a set of the representations and which displays the use indices proximately to each corresponding representation in the set.

63. The system of claim 62, further comprising a third routine adapted to be executed by the processor which displays a description corresponding to at least one use index, wherein the description is indicative of status information regarding one of the plurality of entities.

64. The system of claim 63, further comprising a fourth routine adapted to be executed by the processor which analyzes the at least one use index to provide the description.

65. The system of claim 62, further comprising:

a third routine adapted to be executed by the processor which combines the use indices of the representations in the set to provide a higher level use index for a higher level entity; and

a fourth routine adapted to be executed by the processor which displays a representation of the higher level entity and which displays the higher level use index displayed proximately to the higher level entity.

66. The system of claim 65, wherein the representation of the higher level entity comprises the display of the set of the representations.

67. The system of claim 65, wherein the higher level use index is a performance index indicating the relative performance of the higher level entity.

68. The system of claim 65, wherein the higher level use index is a variability index indicating an amount of deviation of a parameter of the higher level entity.

69. The system of claim 65, wherein the higher level use index is a utilization index indicating a degree of exploitation of the higher level entity.

70. The system of claim 65, wherein the higher level use index is a health index indicating the health of the higher level entity.

71. The system of claim 65, further comprising a fifth routine adapted to be executed by the processor which displays a description corresponding to the higher level use index, wherein the description is indicative of status information of the higher level entity.

72. The system of claim 71, further comprising a sixth routine adapted to be executed by the processor which performs a data analysis of the higher level use index to provide the description.

73. The system of claim 65, further comprising a fifth routine adapted to be executed by the processor which switches between displaying the representation of the higher level entity and displaying a representation of one of the plurality of entities that comprise the higher level entity in response to a user action.

74. The system of claim 65, wherein the representation of the higher level entity is a representation of the process plant.